amount. Hence the correct vision of vertical lines under these circumstances is a phenomenon of psychic origin due to the fact that the subject is conscious of the position of his eyes, and makes the requisite allowances.

Unilateral Cataract from Electricity.—BICHELONNE (*Annal. d'oculist.*, August, 1910, p. 108) concludes that, considering the number of instances of accidental contact with currents of high power, cataract from such a cause is rare, a circumstance which may be due to the fact that the crystalline lens becomes affected only when one of the points of contact is not far from the eye itself, which is also a rare occurrence, for the contact is most commonly made by the two hands. For the same reason the cataract is almost always localized upon the affected side. Voltage seems to have little influence. The opacity of the lens is tardy in appearing, and seems to be dependent not upon lesions of the nerve centres or peripheral nerves, but upon a local trophic disturbance, circulatory or otherwise, which manifests itself upon an organ more vulnerable than the neighboring parts.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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The Interrelation of Glands of Internal Secretion. III. Chemotaxis.—BERTELLI, FALTA, and SCHWEEGER (*Ztschr. f. klin. Med.*, 1910, lxxi, 23) have studied the effect which a number of substances show upon the cells of the circulating blood when injected subcutaneously into dogs. These substances were adrenalin, pilocarpine, atropine, sodium nitrite, extracts of the infundibular and glandular portions of the pituitary body, cholein hydrochlorate, and ergotin. They find that, in general, these substances may be divided into two groups according to their effects upon the blood cells, or rather upon the blood-forming organs. The first group, represented by adrenalin and atropine, produces a rapid, marked, and prolonged hyperleukocytosis, accompanied at first by increase in the eosinophilic cells and later by disappearance of these cells from the blood. Adrenalin, moreover, gives rise to a rapid polycythemia, for the red cells increased ten minutes after injection 40 per cent. and after five hours at times 70 to 100 per cent. The second group includes all the other substances, and their action is characterized by the following effects: At first there is transitory accumulation of the neutrophilic leukocytes in the internal organs, and especially in the liver, while at the same time there is an actual increase in the mononuclear cells in the peripheral circulation and more or less pronounced hypereosinophilia. Later, the blood shows an increase in the neutrophilic and eosinophilic leukocytes. The action of adrenalin and of the substances in the second group is not believed to be dependent upon blood pressure changes nor upon changes in the caliber of the capillaries, nor does the explanation based by Ehrlich upon the theory of negative and positive chemotaxis seem adequate to explain the action of these substances. The authors point out the fact that the substances in each of the two groups have in common a similar action on the nervous system: adrenalin, for instance, acting as an excitant to sympathetic nerves. This analogy is suggestive in connection with the prompt response of the cells of the blood to injections of adrenalin, and there is good reason to suppose that the substances in the first group act as stimulators of the bone marrow and of increased blood formation. The explanation for local chemotaxis is not clear, but it seems at least that when substances arrive in the circulation the chemotactic stimulus runs parallel with the variation in tone of the sympathetic nervous system. The authors suggest that the variations in the output of cells from the blood-forming organs may be in part controlled by internal secretions.

The Venous Pulse in Fibrillation of the Auricle in the Mammalian Heart, with Reference to the Venous Pulse in Pulsus Irregularis Perpetuus.—RIHL (*Ztschr. f. exp. Path. u. Therap.*, 1910, vii, 693) has studied the graphic tracings made by means of a special tambour from the jugular veins in dogs in which fibrillation of the auricle was produced by electrical stimulation of the vagus nerve. The carotid and subclavian arteries on the side from which the venous tracings were made were tied off to prevent a transmitted pulsation to the vein. The activity of the auricle and ventrical was recorded by the suspension method. Since the method of tracing the waves in the jugular vein was the same as that employed in man, the venous tracings were comparable to those taken from human subjects. Before the production of fibrillation of the auricle the venous pulse showed a well-marked *a* wave, followed by the two waves of ventricular origin. After the establishment of fibrillation of the auricle the *a* wave disappeared entirely from the venous tracings, leaving only the two waves of ventricular origin. The tracings therefore corresponded exactly with those which are obtained in man in pulsus irregularis perpetuus, not only in the disappearance in the wave produced by the contraction of the auricle, but even in certain minute details concerning the size and variation in the waves dependent upon the ventricular action.

The Keith-Flack Node in the Production of Cardiac Arrhythmia.—The recent investigations of Walter Koch upon the anatomy and pathology of the bundle of muscle described originally by Keith and Flack as lying between the vena cava superior and the auricle, has suggested that certain pathological changes in this region may possibly play a part in the production of some of the cardiac diseases which at the present are not perfectly understood. Thorel, too, has described a bundle of muscle fibers which connects the sinus node with the node of Tawara in the auricle. Owing to the probable interest which the Keith-Flack node may have for clinical medicine, MacKenzie already having suggested that lesions of this muscle bundle may be connected with perpetual arrhythmia, JAGER (*Deut. Arch. f. klin. Med.*, 1910, c, 1) has destroyed the node in 15 dogs and 45 cats in order to see what effect